

## CLAIMS

We Claim:

1. An input/output transition board system for transferring data between an I/O board and a backplane board, comprising:

an I/O board having at least one I/O connector and at least one front I/O connector;

a transition board having at least one rear connector connectable to said at least one front I/O connector and at least one front connector; and

a backplane board having at least one rear backplane connector connectable to said at least one front connector.

2. The input/output transition board system of Claim 1, wherein said transition board is distally spaced a distance from said backplane board when said at least one rear backplane connector is connected to said at least one front connector.

3. The input/output transition board system of Claim 2, wherein said distance is at least about 0.4 inches.

4. The input/output transition board system of Claim 2, wherein said distance is between about 0.4 to 1.0 inch.

5. The input/output transition board system of Claim 1, wherein said transition board includes at least one electronic device.

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3           6. The input/output transition board system of Claim 1, wherein said transition  
4 board is active.

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7           7. The input/output transition board system of Claim 1, wherein said backplane  
8 board has at least one socket.

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11           8. The input/output transition board system of Claim 7, wherein said at least  
12 one socket is on a side opposite of said at least one rear backplane connector.

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15           9. The input/output transition board system of Claim 7, wherein said at least  
16 one socket is in communication with said at least one rear backplane connector.

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19           10. The input/output transition board system of Claim 9, wherein said rear  
20 backplane connector is comprised of a rear panel connector.

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23           11. The input/output transition board system of Claim 1, wherein said  
24 transition board is distally spaced a distance from said I/O board when said at least one  
25 front I/O connector is connected to said at least one rear connector.

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28           12. The input/output transition board system of Claim 11, wherein said  
29 distance is at least about 0.4 inches.

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3        13. The input/output transition board system of Claim 11, wherein said  
4 distance is between about 0.4 to 1.0 inch.  
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7        14. The input/output transition board system of Claim 1, wherein said I/O  
8 board is attachable to an interior surface of an enclosure.  
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11       15. The input/output transition board system of Claim 14, wherein said at least  
12 one I/O connector is extendable through a corresponding opening within said  
13 enclosure.  
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16       16. The input/output transition board system of Claim 1, wherein said at least  
17 I/O connector is hermetic.  
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20       17. The input/output transition board system of Claim 1, wherein said at least  
21 I/O connector includes at least about 250 electrical conductors.  
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24       18. The input/output transition board system of Claim 1, including an  
25 enclosure capable of receiving said I/O board, said transition board and said backplane  
26 board, wherein said enclosure is comprised of a spray cooling system.  
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1           19. The input/output transition board system of Claim 1, wherein said I/O  
2 board, said transition board and said backplane board are substantially parallel to one  
3 another.

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6           20. The input/output transition board system of Claim 1, including at least one  
7 first auxiliary connector connected to said backplane board and a first auxiliary board  
8 connectable to said auxiliary connector.

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11           21. The input/output transition board system of Claim 20, including at least  
12 one second auxiliary connector connected to said first auxiliary board and a second  
13 auxiliary board connectable to said second auxiliary connector.

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16           22. An input/output transition board system for actively transferring data  
17 between an I/O board and a backplane board, comprising:

18           an I/O board having at least one I/O connector and at least one first connector;  
19           a transition board having at least one second connector connected to said at  
20 least one first connector and at least one third connector, wherein said transition board  
21 is active;

22           at least one electronic device connected to said transition board;

23           a backplane board having at least one fourth connector connected to said at  
24 least one third connector, wherein said backplane board has at least one socket capable  
25 of receiving at least one card;

26           wherein said I/O board, said transition board and said backplane board are  
27 substantially parallel to one another; and

28           an enclosure surrounding said I/O board, said transition board and said  
29 backplane board, wherein said at least one I/O connector extends through a wall of

1 said enclosure, wherein said I/O board is at least near an inner surface of said  
2 enclosure.

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5 23. The input/output transition board system of Claim 22, wherein said  
6 transition board is distally spaced a distance from said backplane board when said at  
7 least one fourth connector is connected to said at least one third connector.

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10 24. The input/output transition board system of Claim 23, wherein said  
11 distance is at least about 0.4 inches.

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14 25. The input/output transition board system of Claim 23, wherein said  
15 distance is between about 0.4 to 1.0 inch.

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18 26. The input/output transition board system of Claim 22, wherein said at least  
19 one socket is on a side opposite of said at least one fourth connector.

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22 27. The input/output transition board system of Claim 22, wherein said at least  
23 one socket is in communication with said at least one fourth connector.

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26 28. The input/output transition board system of Claim 27, wherein said fourth  
27 connector is comprised of a rear panel connector.

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2 transition board is distally spaced a distance from said I/O board when said at least one  
3 first connector is connected to said at least one second connector.

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6           30. The input/output transition board system of Claim 29, wherein said  
7 distance is at least about 0.4 inches.

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10          31. The input/output transition board system of Claim 29, wherein said  
11 distance is between about 0.4 to 1.0 inch.

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14          32. The input/output transition board system of Claim 22, wherein said at least  
15 I/O connector is hermetic.

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18          33. The input/output transition board system of Claim 22, wherein said at least  
19 I/O connector includes at least about 250 electrical conductors.

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22          34. The input/output transition board system of Claim 22, including an  
23 enclosure capable of receiving said I/O board, said transition board and said backplane  
24 board, wherein said enclosure is comprised of a spray cooling system.

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27          35. The input/output transition board system of Claim 22, wherein said I/O  
28 board, said transition board and said backplane board are substantially parallel to one  
29 another.

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36. The input/output transition board system of Claim 22, including at least one first auxiliary connector connected to said backplane board and a first auxiliary board connected to said auxiliary connector.

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37. The input/output transition board system of Claim 36, including at least one second auxiliary connector connected to said first auxiliary board and a second auxiliary board connected to said second auxiliary connector.

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38. The input/output transition board system of Claim 22, wherein said enclosure is sealed.

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